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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,584	05/23/2006	Hideo Tashiro	2870-0319PUS1	6678

2292 7590 02/20/2007  
BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
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LAM, ANN Y

ART UNIT	PAPER NUMBER
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1641

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
31 DAYS	02/20/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 31 DAYS from 02/20/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

# Office Action Summary

Application No.

10/560,584

Applicant(s)

TASHIRO ET AL.

Examiner

Ann Y. Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-30 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-18, drawn to a substrate or microarray, classified in class 436, subclass 518.

Group II, claim(s) 19-22, drawn to a method of promoting interaction between biomolecules, classified in class 435, subclass 4.

Group III, claim(s) 23-27, drawn to a method of detecting interaction between biomolecules, classified in class 356, subclass 303.

Group IV, claim(s) 28-30, drawn to a method of promoting interaction between an immobilized biomolecule and a target biomolecule, classified in class 435, subclass 287.1.

The inventions listed as Groups I and (II-III) do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack a common special technical feature over the prior art for the following reasons:

The technical feature linking the groups I and (II-III) appears to be that they all relate to an apparatus comprising a substrate including one or more spots for immobilizing a biomolecule, in which said spot protrudes from the surface of the

substrate and has a flat surface and wherein the surface of the substrate around the protruding spot and the flat surface are comprised of an electrically conductive substance.

However, Agrawal et al., 20030148401, disclose a substrate with microfeatures that protrude from the substrate and that have a flat surface (see figure 1B and paragraph 0097) and the flat surface having immobilized biomolecules in a pattern, i.e., array, (paragraphs 0132 and 0133), and the substrate being comprised of an electrically conductive material (paragraph 0171).

Therefore, the technical feature linking the inventions of groups I and (II-III) does not constitute a special technical feature as defined by PCT Rule 13.2, as it does not define a contribution over the prior art.

The special technical feature of Group I is considered to be a substrate or microarray comprising the substrate and biomolecules, wherein the spot on the substrate for immobilizing a biomolecule protrudes from the surface of the substrate and has a flat surface, and a surface of the substrate around the protruding spot part, wherein at least the protruding spot part has a surface of an electrically conductive substance.

The special technical feature of Group II is considered to be a method of promoting interaction between biomolecules comprising applying an electric field between a microarray and electrode.

The special technical feature of Group III is considered to be a method of detecting interaction between biomolecules comprising detecting using a confocal

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detector the interaction between a target biomolecule and a biomolecule on each biomolecule-immobilized spot of the microarray of claim 10.

Accordingly, Groups I-III are not so linked by the same or a corresponding special technical feature as to form a single general inventive concept.

The inventions listed as Groups I and IV do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack a common special technical feature over the prior art for the following reasons:

The inventions listed as Groups I and IV do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The technical feature linking the groups I-III appears to be that they all relate to a microarray.

However, Agrawal et al., 20030148401, disclose a microarray, (paragraphs 0024 and 0132 and 0133.)

Therefore, the technical feature linking the inventions of groups I and IV does not constitute a special technical feature as defined by PCT Rule 13.2, as it does not define a contribution over the prior art.

The special technical feature of Group I is considered to be a substrate or microarray comprising the substrate and biomolecules, wherein the spot on the substrate for immobilizing a biomolecule protrudes from the surface of the substrate and

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has a flat surface, and a surface of the substrate around the protruding spot part, wherein at least the protruding spot part has a surface of an electrically conductive substance.

The special technical feature of Group IV is a method of promoting interaction between an immobilized biomolecule and a target biomolecule comprising contacting a biomolecule microarray comprising one or more spots having said biomolecule immobilized thereon with a solution comprising the target biomolecule, adding a buffer and applying an electric field to the solution so the target biomolecule migrates toward the biomolecule-immobilized spot.

Accordingly, Groups I and IV are not so linked by the same or a corresponding special technical feature as to form a single general inventive concept.

The inventions listed as Groups II-IV do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack a common special technical feature over the prior art for the following reasons:

The technical feature linking the groups II-IV appears to be that they all relate to a method of using a microarray.

However, Agrawal et al., 20030148401, disclose a method of using a microarray, (paragraphs 0024 and 0137.)

Therefore, the technical feature linking the inventions of groups I and IV does not constitute a special technical feature as defined by PCT Rule 13.2, as it does not define a contribution over the prior art.

The special technical feature of Group II is considered to be a method of promoting interaction between biomolecules comprising applying an electric field between a microarray and electrode.

The special technical feature of Group III is considered to be a method of detecting interaction between biomolecules comprising detecting using a confocal detector the interaction between a target biomolecule and a biomolecule on each biomolecule-immobilized spot of the microarray of claim 10.

The special technical feature of Group IV is a method of promoting interaction between an immobilized biomolecule and a target biomolecule comprising contacting a biomolecule microarray comprising one or more spots having said biomolecule immobilized thereon with a solution comprising the target biomolecule, adding a buffer and applying an electric field to the solution so the target biomolecule migrates toward the biomolecule-immobilized spot.

Accordingly, Groups II-IV are not so linked by the same or a corresponding special technical feature as to form a single general inventive concept.

Moreover, the search for all the groups would be a serious burden on examiner because the inventions have acquired a separate status in the art in view of their different classification, and the search for all the elements of one group is not required

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for a search for all the other elements of the other groups, thus restriction for examination purposes as indicated is proper.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ann Y. Lam whose telephone number is 571-272-0822. The examiner can normally be reached on Mon.-Fri. 10-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

 2/9/07

ANN YEN LAM  
PATENT EXAMINER